

INTRODUCTION

This report documents the methods and technical criteria used by staff of the South Florida Water Management District (SFWMD or District) to develop minimum aquifer levels (MALs) for the Lower West Coast (LWC) aquifers. These MALs are being developed pursuant to the requirements contained within the "Florida Water Resources Act", and specifically, Sections 373.042 and 373.0421, F.S., as part of a comprehensive water resources management approach geared towards assuring the sustainability of the water resources. The proposed MALs are not a "stand alone" resource protection tool; but should be considered in conjunction with all other resource protection responsibilities granted to the water management districts by law. This includes consumptive use permitting, water shortage management, and water reservations. A model framework identifying the relationship between these tools is discussed in this document and was used in developing the MALs. In addition, the District has completed the Lower West Coast Water Supply Plan (LWCWSP) pursuant to Chapter 373.0361 F.S., which identifies potential future supplies and demands and provides recommendations for water resource development projects to provide for reasonable demands of humans and the environment over the next twenty years. The LWCWSP also includes a recommendation for the establishment of the minimum aquifer levels and outlines a prevention strategy pursuant to the requirements of law.

Establishing *minimum* levels alone will not be sufficient to maintain a sustainable resource or protect it from significant harm during the broad range of water conditions, which occurs in South Florida. The necessary hydrologic/hydrogeologic regime for sustainability of the LWC aquifer system must be defined and implemented through the use of other water resource protection tools including planning and regulatory efforts that will be implemented over time to expand and protect water supply and distribution. The proposed minimum levels for the LWC aquifers will be used by the District, and other agencies, as regional indicators that significant harm to the resource may be imminent unless management actions are taken. In such cases, a regional response would occur, such as mandatory water restrictions and/or shifting to alternative supplies. Development of minimum level criteria for the aquifer system as a means to protect the aquifers from significant harm should not change the application of existing drought management methods and criteria that affect operation of individual wellfields.

This document represents a formal step in the process to establish a MAL for LWC aquifers. This report includes 1) a description of the framework for determining MFLs based on the best available information (this approach may be applied to other surface and ground waters within the District) and 2) development of a technical methodology and basis for establishing MALs for LWC aquifers. Other steps in the formal MAL establishment process include 1) an independent scientific peer review of this document pursuant to Section 373.042, F.S., 2) rule drafting, 3) governing board policy review and approval and 4) final rulemaking. All of these steps are conducted under the review and participation of the public through noticed public meetings.

Implementation of the MALs is achieved after the rule becomes effective and includes execution of the prevention strategy through fulfilling the recommendations contained in this report including application of the District's water shortage rules as conditions warrant.

The first chapter of this report provides the legal and policy basis for establishing a minimum flow or level. Chapter 2 describes the geographic setting, the water resources at risk, and functions that these resources serve and that need to be protected. Chapter 3 documents the methods and data that were used to establish significant harm criteria for the different areas, resources and functions. Chapter 4 describes the specific hydrologic criteria, with frequency, duration, and depth components, that were developed to indicate the point at which significant harm occurs. Chapter 4 also includes an analysis of the proposed minimum aquifer levels to determine if the criteria is or will be exceeded in the future. Based on this analysis, a recovery or prevention plan will be outlined that will protect the aquifers from exceedances of the criteria. Conclusions and recommendations are presented in Chapter 5. A list of selected references is included at the end of the report. Copies of these documents were made available to the scientific peer review panel.